

WOAH Reference Laboratory Reports Activities 2024

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LABORATORY INFORMATION

*Name of disease (or topic) for which you are a designated WOAH Reference Laboratory:	Bovine viral diarrhoea
*Address of laboratory:	Animal and Plant Health Agency (APHA), Woodham Lane, Addlestone, KT15 3NB
*Tel:	07869000212
*E-mail address:	Amin.Asfor@apha.gov.uk
Website:	http://apha.defra.gov.uk/apha-scientific/services/biological-reagents/bvd.htm
*Name (including Title) of Head of Laboratory (Responsible Official):	Dr Amin Asfor (Head of the BVDV reference laboratory)
*Name (including Title and Position) of WOAH Reference Expert:	Dr Rebecca Strong (WOAH reference Expert)
*Which of the following defines your laboratory? Check all that apply:	Governmental

TOR1: DIAGNOSTIC METHODS

1. Did your laboratory perform diagnostic tests for the specified disease/topic for purposes such as disease diagnosis, screening of animals for export, surveillance, etc.? (Not for quality control, proficiency testing or staff training)

Yes

Diagnostic Test	Indicated in WOAH Manual (Yes/No)	Total number of test performed last year	
		Nationally	Internationally
Indirect diagnostic tests			
Antibody ELISA (serum)	Yes	2477	14
BVD antibodies in bulk Milk	Yes	23	0
Direct diagnostic tests			
BVD virus isolation - semen	Yes	110	0

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VD virus isolation - tissues - 2 passages	Yes	4	0
Erns Antigen ELISA (BVD)	Yes	2326	0
RT-PCR BVD (bulk milk)	Yes	75	0
RT-PCR BVD (whole blood or tissues)	Yes	1407	0
BVD virus in blood RT-PCR	Yes	10	0
BVD Ag ELISA ear notch samples	Yes	14	0
BVD antibodies in individual milk	Yes	0	0
Serum neutralisation (BVD)	Yes	76	0
Serum neutralisation (BVD/BDV)	No	15	0

TOR2: REFERENCE MATERIAL

2. Did your laboratory produce or supply imported standard reference reagents officially recognised by WOA?

No

3. Did your laboratory supply standard reference reagents (nonWOAH-approved) and/or other diagnostic reagents to WOA Members?

Yes

Type of reagent available	Related diagnostic test	Produced/ provide	Amount supplied nationally (ml, mg)	Amount supplied internationally (ml, mg)	No. of recipient WOA Member Countries	Country of recipients
WB160 mAb	BVDV1/BDV detection	20	0	20	3	CHINESE TAIPEI, FRANCE, GERMANY, THE NETHERLANDS,
WB103/105 mAb	Pan pesti virus detection	41	4	25	8	BELGIUM, GERMANY, ITALY, JAPAN, POLAND, SLOVENIA, SPAIN,
WB160 mAb	BVD1 Detection	20	0	20	3	CHINESE TAIPEI, FRANCE, GERMANY,
WB162 mAb	BVDV1 Detection	11	0	11	5	CHINA (PEOPLE'S REP. OF), CHINESE TAIPEI, FRANCE, KOREA (REP. OF), UNITED KINGDOM,
WB210 mAb	BVDV1 detection	36	0	36	7	CHINA (PEOPLE'S REP. OF), FRANCE, GERMANY, IRELAND, KOREA (REP. OF), SPAIN,

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						THE NETHERLANDS,
WB215 mAb	BVDV1 detection	3	0	3	4	FRANCE, GERMANY, IRELAND,
WS363 mAb	BDV detection	17	0	17	3	FRANCE, GERMANY, IRELAND,
WS433 mAb	BVDV2/BDV detection	18	0	18	4	BELGIUM, GERMANY, KOREA (REP. OF), SPAIN,
BVDV mAb mix – WB103/ WB112/ WB116/ WB214	Pan pesti virus detection	3	0	3	3	IRELAND, SWITZERLAND, THE NETHERLANDS,
WB112 mAb	BVDV detection	64	0	64	3	GERMANY, THE NETHERLANDS, UNITED STATES OF AMERICA,
WB214 mAb	BVDV-1 detection	6	0	6	3	CHINESE TAIPEI, GERMANY, IRELAND,
WS538	BVDV-2 detection	3	0	3	2	CHINESE TAIPEI, GERMANY,
mAb WS371	Pestivirus - BVDV/BD	1	0	1	1	IRELAND,
mAb WS373	Pestivirus - BVDV/BD	1	0	1	1	IRELAND,

4. Did your laboratory produce vaccines?

No

5. Did your laboratory supply vaccines to WOA Members?

No

TOR3: NEW PROCEDURES

6. Did your laboratory develop new diagnostic methods for the designated pathogen or disease?

No

7. Did your laboratory validate diagnostic methods according to WOA Standards for the designated pathogen or disease?

Yes

Name of the new test or diagnostic method developed	Description and References (Publication, website, etc.)
Internal Validation for Border disease antibody detection	In progress (available upon request).

8. Did your laboratory develop new vaccines for the designated pathogen or disease?

No

9. Did your laboratory validate vaccines according to WOA Standards for the designated pathogen or disease?

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No

TOR4: DIAGNOSTIC TESTING FACILITIES

10. Did your laboratory carry out diagnostic testing for other WOAHA Members?

Yes

Name of WOAHA Member Country seeking assistance	Date	Which diagnostic test used	No. samples received for provision of diagnostic support	No. samples received for provision of confirmatory diagnoses
IRELAND	2024-07-09	- ELISA for BVD Ab (IDEXX) (1) - Erns Antigen ELISA (BVD) (1)	2	2

11. Did your laboratory provide expert advice in technical consultancies on the request of an WOAHA Member?

Yes

Name of the WOAHA Member Country receiving a technical consultancy	Purpose	How the advice was provided
EGYPT	Advise on the use of monoclonal antibodies to develop differential bioluminescent assay for pestiviruses	Emails and MS Teams platform

TOR5: COLLABORATIVE SCIENTIFIC AND TECHNICAL STUDIES

12. Did your laboratory participate in international scientific studies in collaboration with WOAHA Members other than the own?

Yes

Title of the study	Duration	Purpose of the study	Partners (Institutions)	WOAHA Member Countries involved other than your country
Interpreting and optimising bulk milk testing for BVD considering numerical test outcomes	12months	Establish an international network of laboratory experts and epidemiologists through participation in the CovetLab project. Key contributions include: • Developing advanced statistical methods for evaluating bulk milk testing, specifically for BVD, and collaborating on results from multiple institutes. • Applying latent class models to estimate the sensitivity and specificity of BVD	Arianna Comin (SVA) Viktor Ahlberg (SVA) Matt Denwood (UCPH) Guy Kouokam (ANSES) Stephen Valas (ANSES) Eduardo de Freitas Costa (WBVR) Michel Counotte (WBVR) Aldo Dekker (WBVR) Akbar Dastjerdi (APHA) Amin Asfor	DENMARK FRANCE SWEDEN THE NETHERLANDS

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		detection in bulk milk samples. • Contributing to the development of statistical techniques that leverage continuous diagnostic test values, moving beyond simple positive/negative outcomes.	(APHA) Mark Arnold (APHA) Rachel Jinks (APHA)	
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13. In exercising your activities, have you identified any regulatory research needs* relevant for WOA?H?

No

TOR6: EPIZOOLOGICAL DATA

14. Did your Laboratory collect epidemiological data relevant to international disease control?

Yes

If the answer is yes, please provide details of the data collected:

Testing bulk milk tank samples to understand the epidemiological status of BVD in cattle.

15. Did your laboratory disseminate epidemiological data that had been processed and analysed?

No

16. What method of dissemination of information is most often used by your laboratory? (Indicate in the appropriate box the number by category and list the details in the box)

a) Articles published in peer-reviewed journals:

0

N/A

b) International conferences:

2

1. A Bayesian approach to inter-laboratory diagnostic test evaluation for serological assays. Ahlberg V, Denwood M. de Freitas Costa E, Counotte M, Arnold M, Asfor A, Dastjerdi A, Koukam G, Valas S, Dekker A, Comin A . Society for Bayesian Methods in Epidemiology and Diagnostics - Conference 2024. Brussels, Belgium, January 31-February 2, 2024

2. Interlaboratory diagnostic test evaluation using Bayesian latent class models. A. Comin, V. Ahlberg, E. de Freitas Costa, M. Counotte, A. Dekker, A. Asfor, A. Dastjerdi, M. Arnold, R. Jinks, G. Koukam, S. Valas, M.J. Denwood. Annual meeting of the Society of Veterinary Epidemiology and Preventive Medicine 2024. Uppsala, Sweden, March 20 – 22 2024.

c) National conferences:

0
N/A

d) Other (Provide website address or link to appropriate information):

0
N/A

TOR7: SCIENTIFIC AND TECHNICAL TRAINING

17. Did your laboratory provide scientific and technical training to laboratory personnel from other WOA Members?

No

TOR8: QUALITY ASSURANCE

18. Does your laboratory have a Quality Management System?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)	
ISO 9001	NB: Since 31/12/2017 WOA Reference Laboratories should all be accredited to ISO 17025 or equivalent so if anyone ticks no, they should have been suspended.	ISO 9001 Certificate.pdf
ISO17025	NB: Since 31/12/2017 WOA Reference Laboratories should all be accredited to ISO 17025 or equivalent so if anyone ticks no, they should have been suspended.	ISO17025 Certificate.pdf

19. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
Bovine viral diarrhoea - virus isolation from semen	UKAS
Bovine viral diarrhoea (Erns) antigen - cattle > 30 days old	UKAS
Bovine viral diarrhoea (Erns) antigen ELISA for ear notch tissue samples	UKAS
Bovine viral diarrhoea antibodies in bulk milk	UKAS

20. Does your laboratory maintain a "biorisk management system" for the pathogen and the disease concerned?

Yes

APHA maintains a complete and functioning laboratory biological risk management system, which ensures that the laboratory is in compliance with applicable local, national (UK Health and Safety Executive), regional, and international standards and requirements for biosafety and laboratory biosecurity.

TOR9: SCIENTIFIC MEETINGS

21. Did your laboratory organise scientific meetings related to the pathogen in question on behalf of WOAHP?

No

22. Did your laboratory participate in scientific meetings related to the pathogen in question on behalf of WOAHP?

No

TOR10: NETWORK WITH WOAHP REFERENCE LABORATORIES

23. Did your laboratory exchange information with other WOAHP Reference Laboratories designated for the same pathogen or disease?

Yes

24. Do you network (collaborate or share information) with other WOAHP Reference Laboratories designated for the same pathogen?

No

25. Did you organise or participate in inter-laboratory proficiency tests with WOAHP Reference Laboratories designated for the same pathogen during the past 2 years?

Yes

Purpose of the proficiency test:	Role of your Reference Laboratory (organiser/ participant)	No. participating Laboratories	Participating WOAHP Ref. Labs/ organising WOAHP Ref Lab
BVD bulk Milk	Organiser	29	New Zealand, UK, Denmark, Eire, Portugal, Sweden, Poland, Colombia, Austria, France and Switzerland.
BVD serum	Organiser	47	Eire, Spain, Portugal, Denmark, Switzerland, UK, France, South Africa, Greece, Turkey, Sweden, India, Morocco, Austria, Belgium, Romania, Estonia, Slovenia, Czech Republic, Brazil, Serbia, Poland and Cyprus.
BVD Ear tissue Ag ELISA	Organiser	19	New Zealand, UK, Eire, Portugal, Turkey, Belgium, Austria, Italy and Switzerland.
BVD bulk milk PCR	Organiser	14	UK, Portugal, New Zealand, Dubai, Italy, Israel
BVD Ear tissue PCR	Organiser	22	New Zealand, Eire, France, South Africa, UK, UAE, Belgium, Portugal, Turkey and Switzerland
BVD Ag ELISA & PCR	Organiser	43	UK, New Zealand, Eire, Spain, South Africa, Portugal, Italy, India, Denmark, USA, Slovakia, Belgium, Serbia, Republic of Korea, Turkey, France, Slovenia, Romania, India, Colombia and Switzerland.

26. Did your laboratory collaborate with other WOA Reference Laboratories for the same disease on scientific research projects for the diagnosis or control of the pathogen of interest?

Yes

Title of the project or contract	Scope	Name(s) of relevant WOA Reference Laboratories
Assessment of the correlation between the commercially available BVDV Ab tests and the gold standard SNT	Compare between the ELISA test results and the SNT for BVDV1, Differential SNT (BVDV and BDV)	National reference Laboratory ANCES-France (on going)

TOR11: OTHER INTERLABORATORY PROFICIENCY TESTING

27. Did your laboratory organise or participate in inter-laboratory proficiency tests with laboratories other than WOA Reference Laboratories for the same pathogen during the past 2 years?

Yes

Purpose for inter-laboratory test comparisons ¹	Role of your reference laboratory (organizer/participant)	No. participating laboratories	Name of the test	WOAH Member Countries
Compare the proficiency of total Ab ELISA kits from different laboratories in Bulk tank Milk	Participant	5	BVD antibodies in bulk Milk	DENMARK, FRANCE, SWEDEN, THE NETHERLANDS, UNITED KINGDOM,

TOR12: EXPERT CONSULTANTS

28. Did your laboratory place expert consultants at the disposal of WOA?

Yes

Kind of consultancy	Location	Subject (facultative)
Expert Group to discuss WOA Terrestrial Manual chapters review	remote	BVDV
Expert Group to review the case definition for bovine viral diarrhoea	remote	BVDV

29. Additional comments regarding your report:

No

N/A